

2 Alternatives

2.1 Introduction

The project team examined a total of five variations on connecting Route 359 to the Colonial Parkway, while seeking to maximize pedestrian and vehicle safety, minimize congestion and visitor confusion, and retain the existing character and design details of the Parkway. After considerable study, two options were dropped from future consideration, and the following three alternatives were selected for further evaluation:

- Alternative A – No Action
- Alternative B – Preferred Alternative
- Alternative C – Bus Loop Alternative

Proposed alternatives are for actions on NPS property only. The proposed VDOT alignment for Route 359 that is not on NPS property is assumed for each proposed alternative, including the No Action.

2.2 Alignments for 359 Considered but Rejected

Besides the three alternatives mentioned above, two other alignments were considered but rejected because of safety concerns, feasibility, and scheduling. These alternatives included leaving the current alignment of Route 359 as depicted on the aerial photograph in Figure 2 with signal and/or crosswalk modifications and/or additions and the potential connection of Route 359 to Route 614, Greensprings Road. Figure 4 depicts a conceptual drawing of this possible connection.

2.2.1 Current 359 Alignment

This variation on the design involved keeping the roadway on its current alignment and creating improvements to secure pedestrian movements to and from the Jamestown Settlement museum. Since Route 359 would remain in its current location, the Jamestown Settlement visitors would still need to cross the roadway to get from the parking lot to the Jamestown Settlement. To mitigate this problem without realigning the roadway, the project team and VDOT evaluated several methods of improving pedestrian crossings while keeping traffic flows at a high level of service. These improvements included:



- Building at-grade pedestrian-activated crossing signals;
- Building a grade-separated crossing for pedestrians; and
- Blocking direct pedestrian access to the Jamestown Settlement museum and redirecting foot traffic to a signalized intersection of Route 359 and Route 31 with pedestrian crossing at-grade.

After evaluating the costs and the traffic impacts of these improvements, this option was dropped from further study. An at-grade signal would have caused extensive vehicle queuing and backups onto Route 31 due to the high volume of pedestrian crossings. Initial counts have shown that up to 1,000 pedestrians cross Route 359 per hour during the peak season. Secondly, a grade-separated crossing, such as a short tunnel, would have been very costly, and due to the high water table it would have been a difficult engineering alternative. A pedestrian bridge could have been built but was rejected due to the costs, visual impacts, and the tendency for pedestrians to avoid the extra effort needed to use a bridge when their goal is easily reached by a short walk across a roadway with slow moving traffic. Without barriers across Route 359 to block this movement, all able pedestrians would take the more simple and direct route across the road to the museum. Finally, the third option of redirecting foot traffic north to the existing intersection of Route 31 and 359 was rejected for the same reason. Extensive barriers would have to be constructed to stop pedestrians from taking the direct route across the roadway.

2.2.2 Direct Connection to Route 614

A second alternative that was dropped from consideration involved relocating Route 359 much farther to the east to connect it with Route 31 at the intersection of Route 614, Greensprings Road (Figure 4). This alternative would use a similar connection to the Colonial Parkway at the south end of Route 359 as in the Preferred Alternative, but had a much greater impact to private property near the Jamestown Marina, east of the Settlement parking lot.

In particular, James City County was opposed to this action until zoning could be put in place to ensure the integrity of the historic area. Additionally, this alternative would require the Jamestown Settlement to acquire more land than currently agreed to in their property acquisitions boundary approved by their board of directors. Due to these extensive land use and land acquisition issues, as well as the limited schedule and funding, this alternative was dropped from further study.

2.3 Alternative A—No Action Alternative

This project is prompted by a design proposed by VDOT that would relocate Route 359 north and east of its current location in order to travel around the Jamestown Settlement parking lot, as previously discussed. Because this action will happen as originally designed by VDOT if any of the proposed NPS modifications do not prevail, it is the No Action Alternative. For the purposes of this project, the No Action Alternative represents no action resulting in impacts to NPS property. The specifics relating to this alignment are discussed below. The modifications made at the southern end of the realigned Route 359 (where it connects with the Colonial Parkway) constitute the proposed action alternatives, B and C.

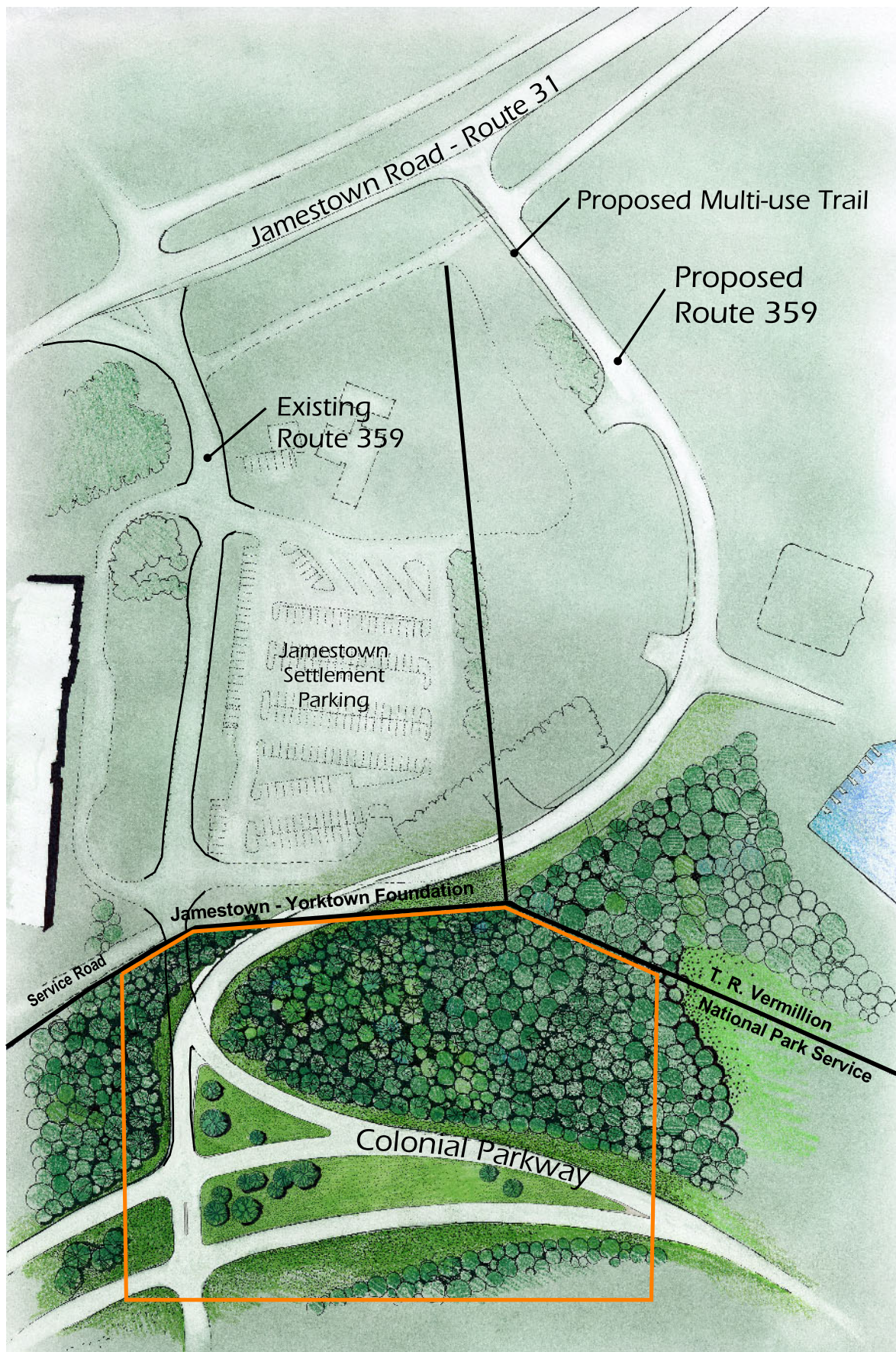
The VDOT design for the realignment of Route 359 was developed with the specific intention of avoiding impacts to NPS property, thus avoiding the necessity of the NEPA process. It includes moving the intersection of Route 359 and Route 31, Jamestown Road, northeast approximately 400 feet, thus creating a new intersection. The new alignment of Route 359 would travel south, wrapping around the eastern and southern edges of the existing Settlement parking lot and connecting with the existing Colonial Parkway access ramp. Access would be provided from this new alignment into the Settlement lot and the Jamestown Marina. The roadway would be a two-lane asphalt section with typical concrete curb and gutter design. Additionally, a multi-use trail is being proposed by James City County in coordination with VDOT and the Settlement. This trail would connect Route 31 to the Colonial Parkway, running parallel to Route 359 within the buffered area on the southwestern side of the roadway. Drainage for stormwater would be provided in an extended dry detention basin as part of the design. It is the intent of James City County, the APVA, and NPS to include extensive landscaping within the buffer and clear, concise signage to direct visitors to all Jamestown facilities. The new alignment would include a total of 1,600 linear feet of new construction, while the old Route 359 would be demolished and removed (Figure 3).

Under Alternative A, the No Action Alternative, none of this new construction would occur on NPS property. At the Colonial Parkway connection, the new alignment for Route 359 would form a right-angle intersection with the existing Route 359, located immediately southwest of the Settlement parking lot entrance and near the existing service road and continue to the Colonial Parkway as currently configured (Figure 3). The NPS, APVA, James City County, and numerous citizens have raised concerns about this new right-angle intersection, as it would create operational difficulties for traffic due to restrictive turning geometry and may be confusing to visitors. The configuration adds a new left turn in an already confusing traffic area. Visitors arriving via Route 359 would be forced to make an immediate left-hand turn to access the Colonial Parkway, and then make a second decision on routing to Historic Jamestowne (right turn) or to the Colonial Parkway (left turn). The whole NPS/APVA Historic Jamestowne experience could easily be overlooked as a result of the confusing road geometry and poor way finding, potential negative impacts that make this alternative undesirable to the NPS and APVA. Additionally, the right-angle intersection is not characteristic of the Colonial Parkway design, which provides for the free flow of traffic through a scenic corridor.

2.4 Alternative B–Preferred Alternative

Alternative B is a simple modification of Alternative A, and it was conceived through the coordinated efforts of the NPS, APVA, James City County, and the adjacent landowner of the Jamestown Marina. The proposal was developed in consultation with VDOT and the JYF. As mentioned above, the proposed VDOT alignment for Route 359 remains the same, including the multi-use trail and stormwater management on Jamestown Settlement property. However, the connection of the southern end of Route 359 to the Colonial Parkway would be modified. At this point, the road alignment would use simple reverse curves to meet with the existing intersection, eliminating the right-angle intersection and associated left-turn movement, thereby allowing for the free flow of traffic and improving visitor access to the entire Jamestown experience (Figure 5).

In order to accommodate the 48-foot radius curve, Alternative B would impact approximately 11,000 square feet of undisturbed NPS property. The impacts would result from realignment of the roadway on land currently owned by



Not to Scale

Source: Carlton Abbott & Partners, P.C.

- Property Line
- Project Limits

Figure 5
Alternative B - Preferred Colonial Parkway
Connection to the Realigned Route 359

the NPS within the Colonial Parkway right-of-way. The realignment would be designed to retain the existing character and design details of the Colonial Parkway and its associated landscape (more details are described in Chapter 3 under the impacts to “Historic Structures and Cultural Landscapes”). In addition, the existing section of Route 359 on NPS property would be demolished, removed, and revegetated with evergreen and deciduous trees and evergreen shrubs. Eventually, the plantings in this area would help to screen from view the expanding Jamestown Settlement facilities, which are currently a visual impact to the cultural landscape surrounding the Colonial Parkway. The existing brick entry sign in this area would be moved closer to the new alignment so visitors could see it upon entry to NPS property. Additional way-finding signage would also be included to help alleviate existing visitor confusion. Also, the proposed multi-use trail would be realigned to veer away from the roadway into the woods once the proposed Glasshouse Point trail (as proposed in the Jamestown Project DCP/EIS) has been approved. As proposed and depicted in Figure 5, the multi-use trail stops 200 feet from the Parkway entrance and would be minimally visible from the Parkway. A typical cross-section of the proposed connection is shown in Figure 6.

Similar to Alternative A, drainage for stormwater management on the JYF property for the realigned Route 359 would be provided as part of the VDOT design. Because impervious cover on NPS property would actually be reduced from 0.18 acres to 0.17 acres, stormwater management on NPS property would be accommodated by the existing drainage system with slight modifications.

2.5 Alternative C–Bus Loop Alternative

Alternative C shifts the access ramp connection to the Colonial Parkway east of the proposed intersection of Route 359 and the Colonial Parkway in order to accommodate a multimodal stop. As noted previously, the proposed VDOT alignment for Route 359 remains the same, including the multi-use trail and stormwater management. The additional intersection on relocated Route 359 and associated ramp to the Colonial Parkway were reviewed to meet multimodal access needs for large buses and other possible means of transportation (trams, trolleys) that would benefit both the Jamestown Settlement and Historic Jamestowne by using a looped system for turnarounds and a shared bus stop (Figure 7).

Although beneficial for providing a shared multimodal stop, the multimodal stop adjacent to Route 359 adds to driver confusion. Signage for “bus only” access would be confusing for drivers and conflicts between automobiles and buses could occur. The location of the intersection would also require NPS and JYF property to be used, and it would affect access and usability of the adjacent private property. Alternative C would also require removal of additional forested areas on both NPS and JYF property. Removal of a large amount of wooded vegetation in this area would impact the Colonial Parkway landscape by increasing the view into the Jamestown Settlement parking facilities. Travelers on the Parkway would also be able to view the realignment and bus stop. Additionally, construction of the additional access ramp would require an encroachment into the 100-foot Chesapeake Bay Resource Protection Area (RPA) associated with Powhatan Creek.

Because impervious cover would increase on NPS property (by 0.61 acres), Alternative C would require additional stormwater management facilities, associated storm sewer systems, and modification of outfall pipes. The removal of the riparian buffer in the RPA would also further impact drainage and stormwater management.

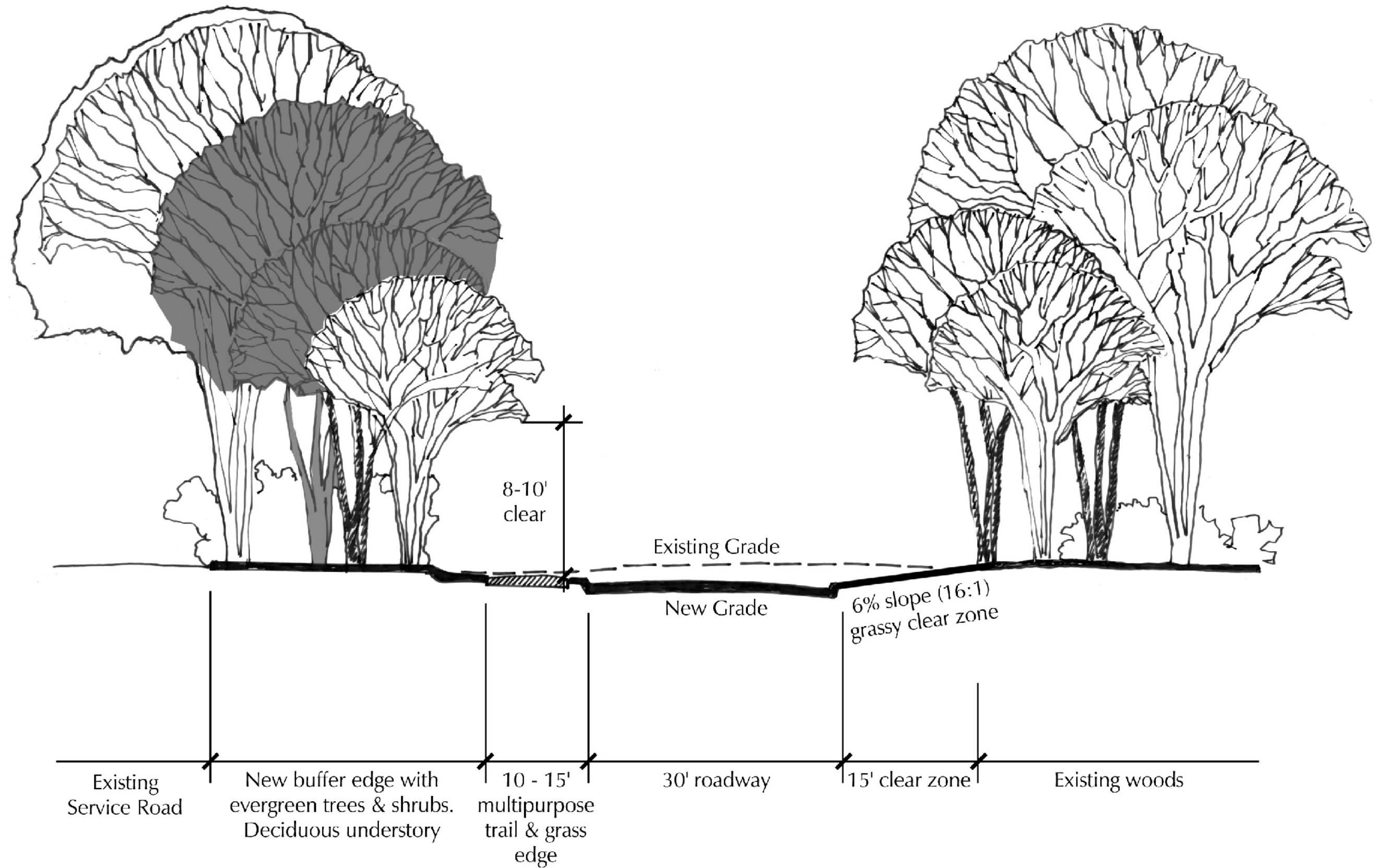
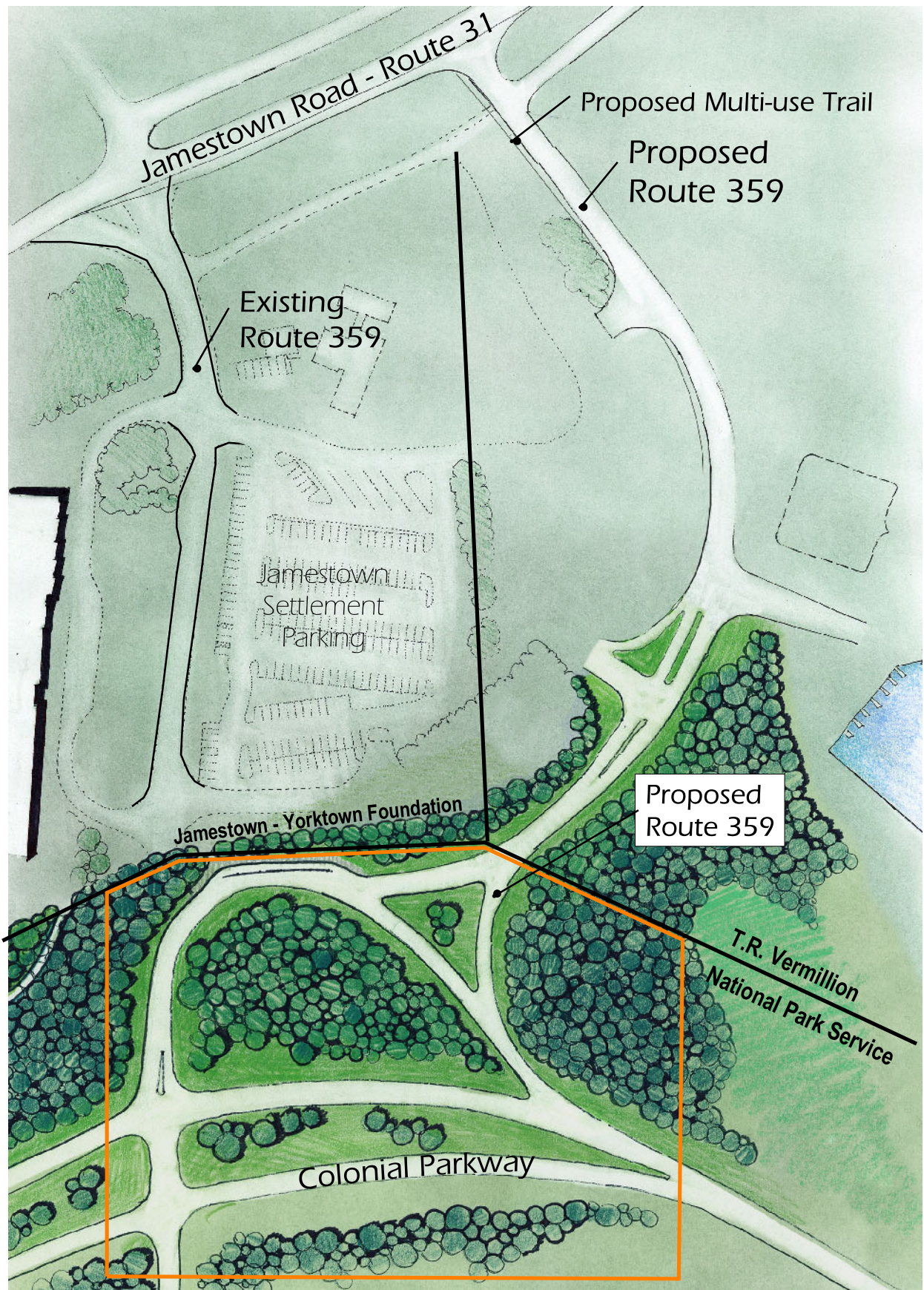


Figure 6
Proposed Cross-Section
Preferred Alternative



— Property Line
— Project Limits

Figure 7
Alternative C - Bus Loop Alternative

2.6 Preferred Alternative

Alternative B is the Preferred Alternative because it best meets the purpose of the project while limiting adverse impacts to cultural and natural resources, visitor experience, and traffic. Even though Alternative C would be beneficial by providing a shared multimodal stop, the associated impacts are too great and it does not adequately meet purpose and need. Alternative B effectively meets purpose and need by maximizing pedestrian and vehicle safety, minimizing congestion and visitor confusion, and retaining the existing character and design details of the Colonial Parkway and its associated landscape. By eliminating the right-angle intersection in Alternative B, traffic would be able to efficiently and safely use the realigned Route 359, avoid potential queuing onto the Colonial Parkway, and improve the visitor's first impressions of Historic Jamestowne through better access to the Parkway. Elimination of an additional left-turn movement to access the Colonial Parkway from Route 359 is the primary benefit of Alternative B. Left-turn movements are generally considered more dangerous and should be eliminated if possible during design. Additionally, these improvements are achieved through minimal cost with minor impacts to NPS property.

2.7 Environmentally Preferred Alternative

The Environmentally Preferred Alternative is defined by the Council on Environmental Quality as “the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act [Section 101 (b)]. Section 101 (b) states that the Environmentally Preferred Alternative should:

- “Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.”

Based on the impacts related to the proposed alternatives, Alternative B has been identified as the Environmentally Preferred Alternative. As noted above, Alternative B best meets the purpose of the project while limiting adverse impacts to cultural and natural resources, visitor experience, and traffic. Alternative A would also limit impacts to natural and cultural resources since the action being taken would not affect NPS property; however, it would continue to impact the cultural landscape and viewsheds along the Colonial Parkway and does not provide for a safe or aesthetically pleasing experience. Table 1 provides a summary of the environmental consequences related to each alternative.

Table 1: Summary of Environmental Consequences			
Resource	Alternative A	Alternative B	Alternative C
Soils and Topography	No impact.	Minor change to topography. Approximately 0.03 acres of prime farmland soils impacted.	Minor change to topography. Approximately 0.22 acres of prime farmland soils impacted.
Vegetation and Wildlife Habitat	No impact.	Minor beneficial impact to vegetation. Net change to wooded vegetation: 0.06 acres added (0.10 removed, 0.16 planted). Wildlife temporarily displaced; impacts negligible.	Moderate adverse impact to vegetation. Net change to wooded vegetation: 0.26 acres removed (0.54 acres removed, 0.28 planted). Wildlife temporarily displaced; impacts minor.
Chesapeake Bay Preservation Areas and Water Quality	No impact.	Minor beneficial impact: impervious cover decreased by 0.01 acres.	Moderate adverse impact: impervious cover increased by 0.61 acres, 0.07 acres of riparian buffer removed within the RPA.
Scenic Roads and Viewsheds	View dominated by Jamestown Settlement museum and parking facilities.	No net change to existing view. Future viewsheds improved by additional vegetated screening of Jamestown Settlement museum.	Moderate adverse impact. Views into Jamestown Settlement parking facilities increased. View of bus loop not adequately screened.
Historic Structures and Associated Landscape	No change to Parkway character. View dominated by Jamestown Settlement museum and parking facilities.	No net change to Parkway character. Future viewsheds improved by additional vegetated screening of Jamestown Settlement museum.	Moderate adverse impact to Colonial Parkway. Viewshed impacted by removal of screening for Jamestown Settlement parking facilities.
Visitor Experience	Visitor confusion continues.	Visitor confusion minimized.	Visitor confusion minimized overall; minor confusion at bus loop.
Traffic and Geometric Design	Traffic flow hindered.	Traffic flow improved.	Potential conflicts between buses and automobiles at bus loop, thus traffic flow hindered.
Stormwater Management	No impact.	Impervious cover decreased by 0.01 acres. No change required to existing stormwater management.	Impervious cover increased by 0.61 acres. Improved and additional stormwater management required.